Claims:

1. A method for generating a customized spectral profile, comprising:

generating a trial source spectrum;

determining an uncorrected lamp source spectrum;

calculating one or more optical indices using the trial source spectrum or the uncorrected lamp source spectrum; and

optimizing one or more of the optical indices by varying the trial source spectrum to generate the customized spectral profile.

2. The method of claim 1, further comprising calculating a corrected lamp source spectrum using the uncorrected lamp source spectrum, and the optical indices being calculated using the trial source spectrum, the uncorrected lamp source spectrum, or the corrected lamp source spectrum.

3. The method of claim 1, the optical indices comprising one or more of chromaticity, filter efficiency, lumens per watt efficiency, overall filter efficiency, watt reduction criteria, color rendering index, and modified color rendering index.

4. The method of claim 3, one or more of the optical indices corresponding to a specific object to be illuminated.

5. The method of claim 4., the specific object comprising a work of art.

6. The method of claim 1, the optimizing comprising varying the trial source spectrum by changing one or more parameters of contributing functions of the trial source spectrum or changing individual values of the trial source spectrum at different wavelengths.

7. The method of claim 1, the customized spectral profile comprising a spectral profile for protecting an object from photodamage.

8. The method of claim 7, the spectral profile rendering only photometric light.

9. The method of claim 7, the object comprising a work of art.

10. The method of claim 1, the customized spectral profile comprising a spectral profile for aesthetically rendering an object.

11. The method of claim 10, the spectral profile comprising a candlelight profile for rendering the object as if illuminated by candlelight.

12. The method of claim 10, the spectral profile comprising a torchlight profile for rendering the object as if illuminated by torchlight.

13. The method of claim 10, the spectral profile comprising a fluorescent profile for rendering the object as if illuminated by fluorescent lighting.

14. The method of claim 10, the spectral profile comprising an incandescent profile for rendering the object as if illuminated by an incandescent light.

15. The method of claim 10, the spectral profile comprising a halogen profile for rendering the object as if illuminated by halogen-based lighting.

16. The method of claim 10, the spectral profile comprising an oil lamp profile for rendering the object as if illuminated by an oil lamp.

17. The method of claim 10, the spectral profile comprising a daylight profile for rendering the object as if illuminated by sunlight.

18. The method of claim 10, the spectral profile comprising a roomlight profile for rendering the object as if illuminated by sunlight or candlelight scattered in a room.

19. The method of claim 10, the spectral profile comprising a gas light profile for rendering the object as if illuminated by a gas light.

20. The method of claim 10, the spectral profile comprising a lime light profile for rendering the object as if illuminated by a lime light.

21. The method of claim 10, the spectral profile comprising a mantle-light profile for rendering the object as if illuminated by a Welsbach mantle.

22. The method of claim 10, the spectral profile comprising an emphasis profile for emphasizing one or more colors of the object.

23. The method of claim 1, the customized spectral profile comprising a spectral profile for correcting the rendering an object.

24. The method of claim 23, the spectral profile comprising a profile for correcting the rendering of the object for an eye experiencing loss of vision with respect to one or more colors.

25. A method comprising steps for generating a customized spectral profile.

26. A method for generating an optical filter, comprising generating an optical filter from a customized spectral profile, the customized spectral profile being generated by optimizing one or more optical indices by varying a trial source spectrum, and the optical indices being calculated using the trial source spectrum or an uncorrected lamp source spectrum.

27. Computer-readable media comprising instructions for:

    generating a trial source spectrum;

    determining an uncorrected lamp source spectrum;

    calculating one or more optical indices using the trial source spectrum or the uncorrected lamp source spectrum; and

    optimizing one or more of the optical indices by varying the trial source spectrum to generate the customized spectral profile.

28. An optical filter generated from a customized spectral profile, the customized spectral profile being generated by optimizing one or more optical indices by varying a trial source spectrum, and the optical indices being calculated using the trial source spectrum or an uncorrected lamp source spectrum.